5. ARP (ACTIVE ROLL-OVER PROTECTION)

The ARP (Active Roll-over Protection) system is a safety assistant device that minimizes, by controlling brakes and the engine, the physical tendency of the vehicle rollover during sharp lane changes or U-turns. For the system, software is added to the existing ESP system and no additional device or switch is needed.

One must note that the ARP system, just as general assistant devices including the ABS, is only a safety assistant device using the ESP system and its function is useless when the situation overcomes the physical power.

Following picture shows how the ARP compensates the vehicle position by varying each wheel’s braking power to overcome the physical tendency of the vehicle rollover during sharp turns.

The vehicle driving condition is controlled by the internally programmed logic according to the input signals from wheel speed sensor, steering angle sensor and lateral sensor.

![Diagram of ARP system](image)

**NOTICE**

- During the ARP operation, vehicle safety (rollover prevention) takes the first priority and thus, stronger engine control is in effect. Consequently, the vehicle speed decreases rapidly, so the driver must take caution for the vehicle may drift away from the lane.

- The ARP function is activated when the vehicle is subject to turning over due to sharp cornering even when the ESP function is turned off (however, the ARP function is also deactivated when the ESP function is not operable due to system malfunction).